

INSTALLING ArcView GIS or ArcGIS SHAPEFILES AND LABELED POINT SHAPEFILES INTO AWIPS FOR DISPLAY IN D2D

*Scott Kroczyński and David Solano
NOAA/National Weather Service
Middle Atlantic River Forecast Center
State College, PA*

*Joshua Watson
NOAA/National Weather Service
Eastern Region Headquarters – SSD
Bohemia, NY*

Introduction

Using ArcView GIS (MARFC uses version 3.1 for UNIX) or ArcGIS 8 or 9 for PCs (MARFC uses ArcGIS 9), previously created *shapefiles* and *labeled point shapefiles* can be *permanently* installed and displayed as AWIPS D2D background maps. The following instructions detail how to permanently install (but not create) these shapefiles into AWIPS. Additional information about AWIPS map backgrounds as well as downloadable maps can be found on the AWIPS Map Database Home Page: <http://www.nws.noaa.gov/geodata>. This NWS Eastern Region AWIPS Technical Note is an update to OB2-05 (Joshua Watson, January 2002). *These instructions assume that you have already successfully created your shapefiles and labeled point shapefiles using a version of ArcView GIS or ArcGIS.*

I. Procedures to PERMANENTLY install shapefiles into AWIPS

1. Login at the local AWIPS LX (Linux) workstation that you first want to install the shape files onto. **IMPORTANT!** *Make sure AWIPS D2D (Display 2 Dimensions) is not running on the AWIPS workstation you are working on! If it is, shut it down now.*

Open a terminal window and login as user fxa:

su -l fxa

type in user fxa's password (obtain this from your SOO, DOH, ESA, AWIPS Focal Point, or other authorized person)

2. Change to the AWIPS directory where the shapefiles have been placed (loaded) by the ArcView GIS (or ArcGIS) "mapmaker." List the contents of the directory to make sure the shapefiles are there. *Note: Each shapefile created by ArcGIS and placed into the directory will have the following 5 extensions: .sbn, .sbx, .shp, .shx, .dbf.* Shapefiles available on the AWIPS Map Database Home Page generally have only three files with the extensions .dbf, .shp, and .shx. For example, if the shapefiles have been placed into someone's home directory on AWIPS:

cd /home/xxx (where xxx is the person's initials)

3. Copy the desired files (with all 3 or 5 extensions) into the AWIPS National Data (nationalData) directory by typing the following command:

cp filename.xxx /data/fxa/nationalData (where *filename.xxx* is the name of the shapefile to be displayed on AWIPS D2D, and .xxx is the extension (.sbn, .sbx, .shp, .shx, .dbf))

4. Change to the /data/fxa/nationalData directory and list the contents to make sure your copied files are in there:

cd /data/fxa/nationalData
ls filename*

5. Choose a "product button number." Product button numbers need to be properly defined for the maps to successfully display on AWIPS D2D. You will need to pick an "unused" button number to add your customized map to your AWIPS D2D. By default, AWIPS uses keys 1000 – 1999 for map backgrounds. However, these are for baseline map backgrounds. A suggestion is to use a high-numbered key, such as 126000, to add a custom map background to D2D.
6. Now change to the following AWIPS directory to customize the map parameters:

cd /data/fxa/customFiles

7. Make backup copies of the 4 map configuration (.txt) files in the /data/fxa/customFiles directory. The 4 files are *localProductButtons.txt*, *localDataKeys.txt*, *localDepictKeys.txt* and *otherBackgroundMenus.txt*. If these 4 files are prepended with your AWIPS site id, these files will only be used for your primary AWIPS localization and will not be used for any backup AWIPS localizations. Also note that information about each of these files can be found in files of the same name, located in the /data/fxa/nationalData/ directory.
8. Using whatever text editor is available on your local AWIPS system (for example, at MARFC we use the text editor “*gedit*”), **edit (or gedit) localProductButtons.txt** and add the following line to the bottom of the file, following the syntax of other lines already in the parameter list:

126000 | <2500, 126000 | Mapname | Mapname | 1 (where 126000 is the product button number you’ve selected, *assuming it is “unused” (see Step 5 above)*, 2500 is the scale size (for example, 2500 allows the map to be displayed on D2D at the WFO, RFC and Regional scale sizes; if you want it to display just on the WFO scale, use <700, and use <2000 if you want it to display on the State scale), and Mapname is the name of the map that is being displayed on D2D). ***Important: Make sure to save the edited file and then exit from the text editor!***

9. **Edit (or gedit) localDepictKeys.txt** and add the following line to the bottom of the file, following the syntax of other lines already in the parameter list:

126000 | 5 | 126000 | | 1 | Mapname | 1 | 1 | 1 | white (this sets the depict key for the map, using the same “unused” product button number of 126000; the map will be displayed on D2D in the color white (other colors can be used – select them by name from the AWIPS file /usr/X11R6/lib/X11/rgb.txt). ***Again, remember to save the edited file and then exit from the text editor.***

10. **Edit (or gedit) localDataKeys.txt** and add the following to the bottom line of the file, following the syntax of other lines already in the parameter list:

126000 | | | | | NAME | shapefile name | | D2D Legendname (this defines the shapefile that goes with the depict key defined in localDepictKeys.txt;

D2D Legendname is the name that will appear in the legend when the map is displayed in D2D – for example, we used *MARFC Basins* as one of our legend names.

NAME is usually the name of the labels in the shapefile, but it could be different in your shapefile. If labels do not appear in D2D, check to make sure this field matches the name of the labels in your shapefile.

The **shapefile name** should match exactly the name of the shapefile(s) that were created by the “mapmaker” using ArcView GIS or ArcGIS for PCs and then copied into the AWIPS National Data directory (i.e., nationalData) in Steps 2 and 3 above, without the extension. If your shapefile was ‘rivers.shp’, then **shapefile name** should be ‘rivers’, without the quotes of course. **Remember to save the edited file and exit out of the text editor.**

11. **Edit (or gedit) otherBackgroundMenus.txt** and add the following to the bottom line of the file, following the syntax of other lines already in the parameter list:

productButton: 126000 # Mapname (this adds the Mapname to the “Maps” drop-down menu in D2D). *Remember to save the edited file and exit out of the text editor.*

12. Assuming you have not changed directories and are still in the /data/fxa/customFiles directory, run the mainScript command that accomplishes adding or deleting map backgrounds to AWIPS D2D. Type:

/awips/fxa/data/localization/scripts/mainScript.csh f –tables –maps

13. Start D2D. Change the display window to WFO, RFC or Regional and then load the newly installed map from the “Maps” drop-down menu, assuming it appears in the menu.
14. If the new map successfully appears as desired (*congratulations!*), you can then load the new map onto any of the other AWIPS LX workstations while still sitting at the AWIPS LX workstation you started at. For example, if you are sitting at local AWIPS workstation #4 (lx4), and you want to load the new maps onto local AWIPS workstation #6 (lx5), type the following:

ssh lx5 –l fxa *IMPORTANT! Make sure AWIPS D2D (Display 2 Dimensions) is not running on local AWIPS workstation #6 (lx5)! If it is, shut it down now.*

15. Run the mainScript command again by typing it exactly as was done in Step 12 above. When the script is done running, start up D2D on local AWIPS workstation #5 (1x5). The new map should now appear on this workstation as well.

II. Procedures to *PERMANENTLY* install labeled point shapefiles into AWIPS

1. Follow Steps 1-9 in Section I exactly as indicated above except using labeled points shapefile(s) and a new product button number.
2. As in Step 10 in Section I above, **Edit (or gedit) localDataKeys.txt**, but instead add the following to the bottom line of the file:

126000 || || || || || LAT, LON, NAME | *point shapefile name* || D2D Legendname
(this defines the labeled points shapefile that goes with the depict key defined in localDepictKeys.txt;

LAT, LON, NAME could also be latitude, longitude, name, depending on your shapefile and how the latitude and longitude fields are named and the name of your labels.

D2D Legendname is the name that will appear when the map is displayed in D2D – for example, we used *METARS* as one of our legend names.

The **point shapefile name** should match exactly the name of the shapefile(s) that were copied into the AWIPS National Data directory (i.e., nationalData), as done in Steps 2 and 3 of Section I above, without the extension.

3. Repeat Step 11 as indicated in Section I above.
4. Run the mainScript command that accomplishes adding or deleting map backgrounds to AWIPS D2D. Type the following exactly (note that this script is slightly different than the script used above in Step 12, Section I; it has **–station** added at the end of the script):

/awips/fxa/data/localization/scripts/mainScript.csh f –tables –maps –station

5. Repeat Step 13 as indicated in Section I above.

6. Assuming the new map successfully appears as desired (*congratulations again!*), to load the new map onto other AWIPS workstations repeat Step 14 from Section I and Step 4 from Section II above.